2 Sheets—Sheet 1.

D. W. De FOREST.

CIGARETTE-MACHINE.

No. 188,237. Patented March 13, 1877.

Fig. 2.

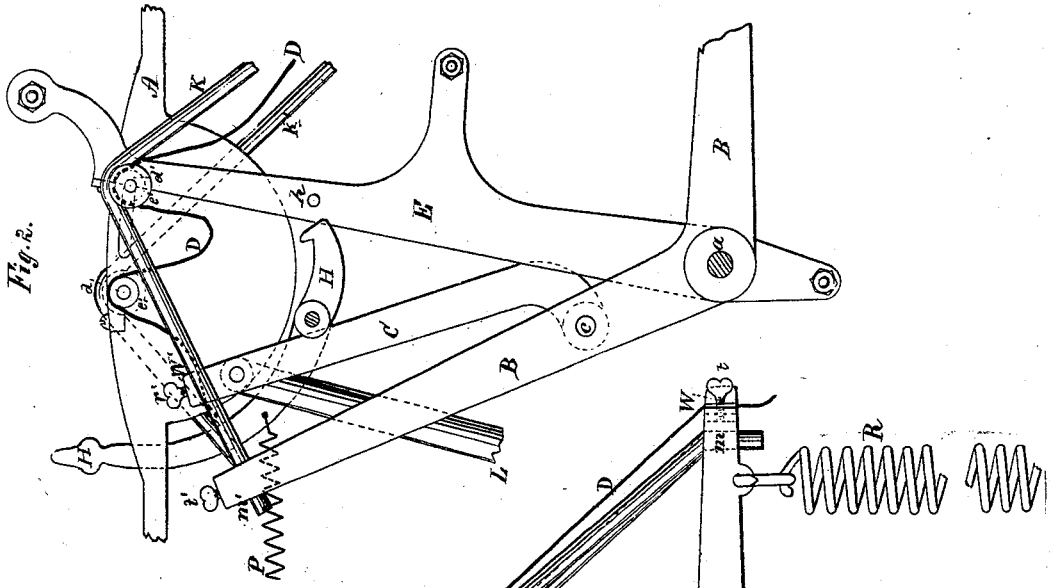
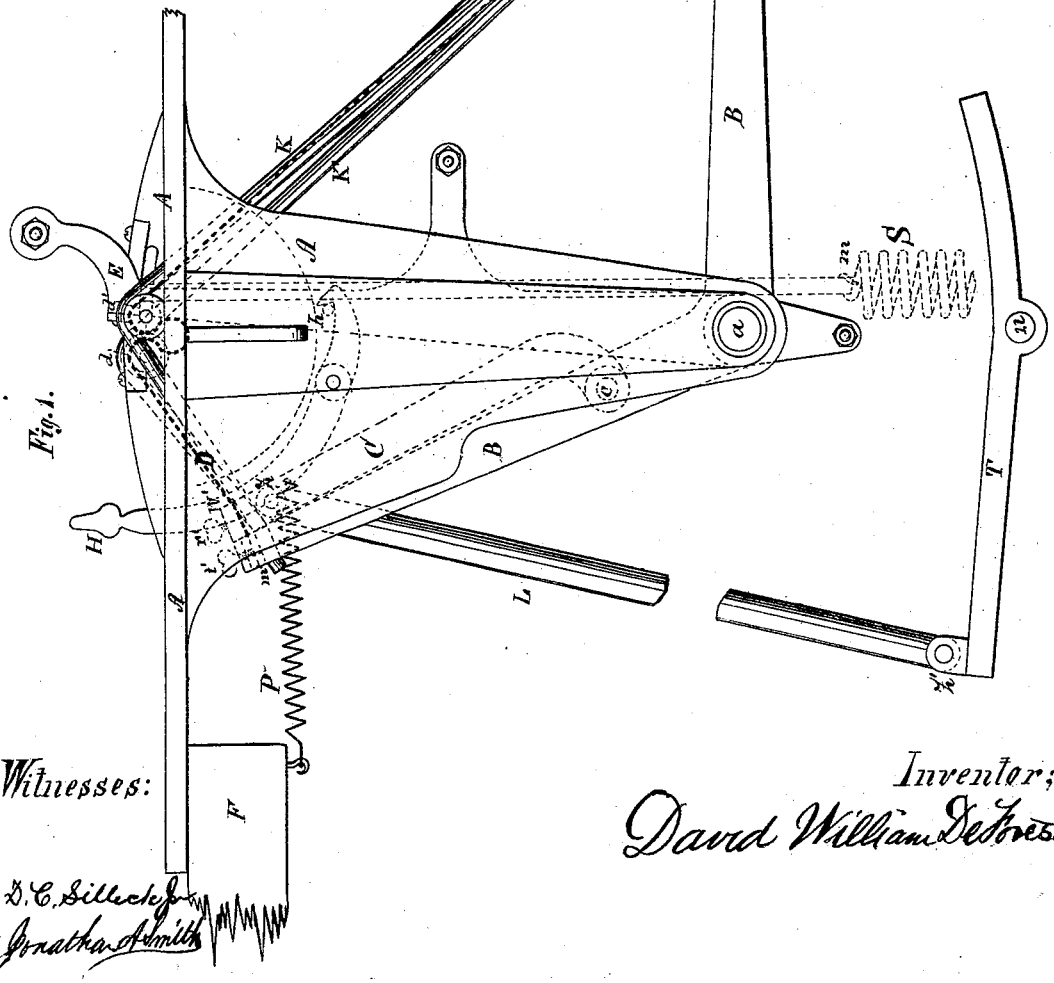


Fig. 1.



Witnesses:

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Inventor;

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2 Sheets—Sheet 2

D. W. De FOREST.

CIGARETTE-MACHINE.

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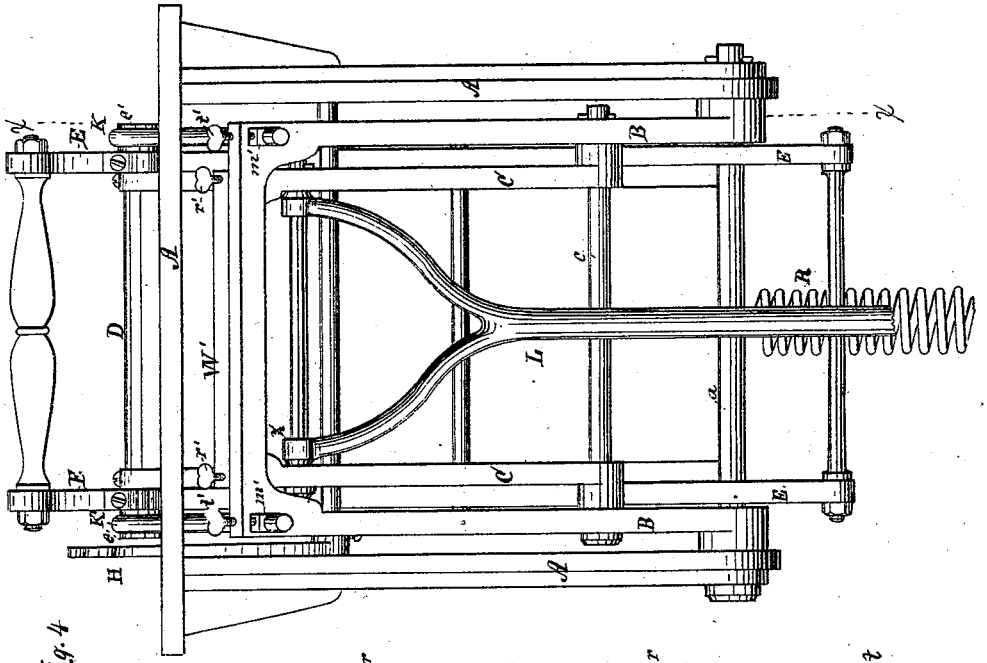

Fig. 4

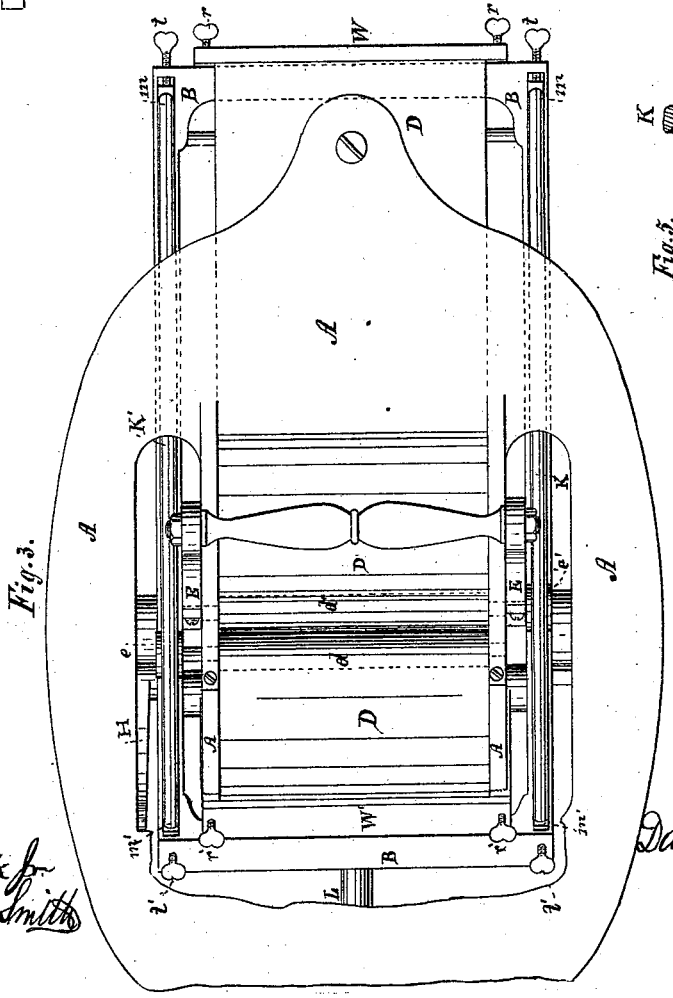

Fig. 3.

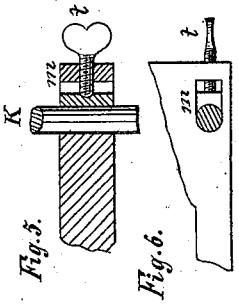

Fig. 5.

Fig. 6.

Witnesses:

D. C. Gilleck Jr.

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David William De Forest

UNITED STATES PATENT OFFICE.

DAVID W. DE FOREST, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM SPENCE, OF SAME PLACE.

IMPROVEMENT IN CIGARETTE-MACHINES.

Specification forming part of Letters Patent No. **188,237**, dated March 13, 1877; application filed November 23, 1876.

To all whom it may concern:

Be it known that I, DAVID WILLIAM DE FOREST, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Cigarette-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation. Fig. 2 is a longitudinal vertical section through that part of the machine as indicated by the line *x x* in Fig. 4. Fig. 3 is a plan view. Fig. 4 is a front end view. Fig. 5 is a sectional view of Fig. 6. Fig. 6 is a plan view, showing the manner of attaching the pulley-belts.

Like letters in all figures represent like parts of the machine.

This invention relates to a tension-frame, so arranged with the belt or apron of a machine for rolling and wrapping tobacco or other materials, and forming what is generally known as cigarettes; also, to means for operating said tension-frame, and to a rock-frame jointed or having thereon a pivoted tension-frame, so that the movement of the frame will operate all of the belts; also, to a spring or its equivalent to recover the essential position of the rock-frame for successive operation.

A is the frame, consisting of one casting with recesses and braces to accommodate the other parts of the machine. B is a hinged or pivoted rock-frame, and for convenience is cast in one piece. C is a tension arm or frame to gain a slack in the belt or apron of the machine, and to operate the main frame for moving the belt or apron to roll and wrap the material as desired. D is the rolling belt or apron for making cigarettes. E is a hinged or pivoted frame consisting of two arms united together by rods and screw-nuts forming a carriage for one of the rollers. F is a sectional view of a table. H is a lock to secure frame E. K K′ are pulley-belts, two in number, and used to rotate rollers *d d′*, and run over pulleys *e e′* attached to spindles of rollers *d d′*. L is a rod connected with a foot or power rack to operate the machine. R is a spring to recover the position of the apparatus for ready reception of materials for cigarettes. P is a spring to operate lock H forming a self-lock by engaging pin *h*. S is a spring attached to the end of belts K K′ when it is desirable to apply a greater friction to rollers *d d′* and pulleys *e e′* than is attained by attaching said belts to rock-frame B at *m′*. T is a foot rack or treadle pivoted under the machine. W is a clamp to retain apron D to the frame. *a* is the pivot upon which B and E rocks. *c* is the pivot upon which C swings. *d d′* are rollers set in motion by pulleys *e e′* carrying belt or apron D. *e e′* are pulleys (for belts K K′) attached to rollers *d d′*. *h* is a pin on frame E to engage H, thus constituting the lock. *m* is the rear end of frame B, where K K′ are attached when a high state of friction is not required. *m′* is the front end of frame B where K K′ are attached. Spring S receives the end *m* of K K′ when a high state of friction is required. *r r′* are set-screws through clamps W W′ for securing apron D in its proper place. *t t′* are set-screws securing belts K K′ by means of a clamp, as represented in Figs. 5 and 6. *x x* show the line (representing Fig. 2) in Fig. 4. *z z′* are the pivots for the ends of rod L.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

The frame A, with its complete apparatus, is let through a hole cut in a table until its wide flanges rest thereon, as represented by F. The foot-rack P is pivoted below at *n* and connected with frame C at *z z′*.

The belt D (which is as wide as the article to be rolled is desired to be in length) is firmly attached, by means of a clamp, W W′, and thumb-screws *r r′*, to the upper end of tension-frame C; also to the rear end of frame B. The belts K K′ are attached to each end of frame B, at *m* and *n′*, by set-screws *t t′*, and is represented in Figs. 5 and 6. The spring R has its lower end attached to a stationary point below; consequently it causes the rock-frame B to take the position as shown in Figs. 1 and 2.

The tobacco and wrappers being on the ta-

ble ready for rolling, the operation is as follows: The operator sits at that end of the machine indicated by F; consequently the feet rest on the foot-rack T, with the heels near z'. The frame E is opened, as seen in Fig. 2. By elevating the operator's heel and pressing downward the fore part of the feet the rack T will elevate rod L, which, being attached to tension-frame C by means of pivot z, will cause frame C to take the position represented in Fig. 2, thus causing the apron D to slacken and form a deep pocket beneath rollers d d', for the reception of the material to be rolled and wrapped. The frame E is then closed and locked by lever H and engaging-pin h. By lowering that end of foot-rack T represented by z', the frame C recovers the slack in belt or apron D, and forms the diameter of the cigarette or roll. The position of C is then against rock-frame B, as represented in Fig. 1, and as the foot-rack T is lowered it causes all belts to move in unison and give, as it were, positive movement to the rollers d d'. The effect of apron D, in passing over and between rollers d d', is to roll the material as desired, when a wrapper is inserted between rollers d d', and is rolled on the cigarette, and it is completed. The handle H of lock is pressed toward rollers d d', disengaging pin h, thus unlocking frame E, and the article rolled is taken from the pocket. The spring R then applies its power (as the operator elevates the heel) and recovers the position represented in Figs. 1 and 2, and is ready for another operation.

It will thus be seen that the forming of the pocket in the apron is wholly under the control of the operator, and governed by a simple movement of the foot, thus enabling him to deposit a large cigarette-bunch or other form of tobacco therein before closing the frames. The tension, too, of the apron is by this means under his control. It will be readily seen that, by attaching the end of belts K K′ to the spring S or to a weight, that their friction upon pulleys e e' will be increased and still give a yielding pressure, whereby the rollers d d' are given an almost positive movement when bunches are to be rolled tightly. The tension of the belts can by various means be graduated as well as the length of apron and size of the pocket therein.

The belts K K′ may, in practice, in some cases, be dispensed with.

The manner of operating arm C may be modified greatly and other parts considerably changed without departing from the spirit of my invention.

Having thus fully described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. In a cigar or cigarette machine, having a reciprocating flexible apron, D, the combination of belts for giving motion to rollers d d', as described.

2. In a cigar or cigarette machine, the belts K, having one end attached to a drawing-lever, B, and the opposite to a yielding means, S, in combination with the rollers d d' and apron D, as set forth.

3. The adjustable tension-frame C, in combination with apron D and frames B E, substantially as set forth.

4. The rod L, foot-rack T, in combination with tension-frame C, frames B E, and apron D, substantially as set forth.

5. The belts K K′, in combination with frame B and spring S, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

DAVID WM. DE FOREST.

Witnesses:

D. C. SILLECK, Jr.,

JONATHAN A. SMITH.